

EROSION RESISTANT COATINGS AND METHODS THEREOF

ABSTRACT

[0043] Erosion resistant coating processes and material improvements for line-of-sight applications. The erosion resistant coating composition includes nanostructured grains of tungsten carbide (WC) and/or submicron sized grains of WC embedded into a cobalt chromium (CoCr) binder matrix. A high velocity air fuel thermal spray process (HVOF) is used to create thick coatings in excess of about 500 microns with high percentages of primary carbide for longer life better erosion resistant coatings. These materials and processes are especially suited for hydroelectric turbine components.